

ABSTRACT OF THE DISCLOSURE

An improved FT-ICR Mass Spectrometer has an ion source 10 which generates ions that are transmitted through a series of multipoles 20 to an ion trap 30. Ions are ejected from the trap 30, through a series of lens and multipolar ion guide stages 40-90, and into a measurement cell 100 via an exit/gate lens 110. The measurement cell is mounted in a vacuum chamber 240 and this assembly is slideably moveable into a bore of a superconducting magnet 400 which provides the magnetic field to cause cyclotron motion of the generated ions in the cell 100. By minimising the distance between the source 10 and cell 100, and by careful alignment of the ion optics, the ions can travel at high energies right up to the front of the measurement cell 100.

The cell 100 extends in the longitudinal direction of the magnet bore and is coaxial with that. The ratio of the sectional area of the magnet bore to the sectional area of the cell volume is small (less than 3). The magnet is asymmetric and is relatively short on the ion injection side. The cell 100 is supported from in front of the cell and electrical contact is from the rear thereof.

R68984.1